# FLOOD PLAIN MANAGEMENT STUDY
# COOSA RIVER
# AND TRIBUTARIES
# IN VICINITY OF
# CHILDERSBURG, ALABAMA

January, 1985


prepared by

**U.S. Department of Agriculture**
**Soil Conservation Service**

in cooperation with

**City of Childersburg**

**Talladega County Soil and Water Conservation District**

**East Alabama Regional Planning and Development Commission**

**Alabama Department of Economic and Community Affairs**

Acknowledgements:

The cooperation and assistance given by the agencies, organizations, and industries during these flood hazard analyses are greatly appreciated. These include:

Talladega County Soil and Water Conservation District (Talladega Co. SWCD)

City of Childersburg

East Alabama Regional Planning and Development Commission (EARPDC)

U.S. Geological Survey, Department of Interior (USGS)

Alabama Department of Economic and Community Affairs (ADECA)

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# FOREWORD

Pressures created by increased urbanization have intensified the demand to use flood plain areas in and adjacent to Childersburg, Alabama. Technical information about flood hazards is essential for a local flood plain management program to be effectively planned and implemented.

This report provides flood hazard information for 14.0 stream miles along the Coosa River and tributaries in Childersburg. The drainage areas involved are 8,390 square miles in the Coosa River Watershed, 175 square miles in Talladega Creek Watershed, 199 square miles in the Tallaseehatchee Creek Watershed, and less than 4.5 square miles in small tributaries. The report includes Flood Hazard Area Photomaps and Flood Profiles for these streams. Land use management practices and corrective measures that would minimize the risk of flooding are also discussed in the report.

Identification of the major flood-prone areas, history of flooding, and pertinent State statutory authority and local flood-prone area land use management practices are contained in the report. State and local governmental units will find this information valuable in assessing flood problems and determining actions needed for the judicious use of lands in and adjacent to the flood plain.

This report deals with stream related flooding and does not cover areas with drainage problems. There are several locations within Childersburg which flood due to drainage problems. These areas are not included in the study and are not designated as flood areas on the Flood Hazard Area Photomaps or Flood Profiles.

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# INTRODUCTION

The City of Childersburg requested a flood plain management study to identify local flood problems and to encourage wise uses of the flood-prone area commensurate with the flood hazard. This study was conducted in accordance with a plan of study developed in April 1981 by the Soil Conservation Service (SCS), the Alabama Department of Economic and Community Affairs (ADECA), and the City of Childersburg. Soil Conservation Service flood plain management studies in Alabama are carried out through a Joint Coordination Agreement (revised April 1983) between the SCS and the ADECA. Data in this report are based on investigations and analyses performed by the SCS in cooperation with ADECA, the City of Childersburg, The East Alabama Regional Planning and Development Commission (EARPDC), and the Talladega County Soil and Water Conservation District (Talladega Co. SWCD).

Flood plain management studies performed by SCS are conducted under the authority of Section 6 of Public Law 83-566, in response to Federal Level Recommendation No. 3 of Water Resources Council revised Unified National Program for Flood Plain Management, September 1979; and in compliance with Executive Order 11988, dated May 24, 1977. Section 11-52-1 through 11-52-84, the Code of Alabama 1975, as amended, provides the zoning authority for municipalities to develop land use controls. Sections 11-19-1 through 11-19-24 of the Code of Alabama 1975, as amended, contains authority for development of a comprehensive land management and use program in unincorporated flood prone areas of the State. It allows county commissions in Alabama to meet requirements of the National Flood Insurance Act of 1968 (as amended), and authorizes the county commissions to prescribe criteria for land management and use in flood-prone areas.

The objective of this flood plain management study is to furnish needed technical data to local governments so they can prevent potential flood losses that might be caused by unwise development in flood-prone areas.

Information on the possibility of future storms of various magnitudes and the extent of flooding which might occur is included for Coosa River, Talladega Creek, Tallaseehatchee Creek, and its tributaries within and adjacent to the City of Childersburg, Alabama. The extent of potential flooding from the 100-year and 500-year floods are shown on aerial photomaps. Elevations of expected flooding for selected recurrence intervals (10-, 50-, 100-, and 500-year events) are provided on flood profiles for the streams studied. (See "Glossary of Terms" in Appendix C for detailed definitions of terms used in the report.)

By using the maps, tables, and profiles presented in this report, the flood elevation at selected locations along the streams may be determined. This information will permit local units of government to implement flood plain management regulations which recognize potential flood hazards.

The maps and profiles are based on conditions that existed at the time field surveys were made in 1982. Such factors as increased urbanization, encroachment of flood-prone areas, relocation or modification of bridges and other stream crossings, and stream channel improvement can have a significant effect on flood stages and areas inundated. Therefore, the results of any flood hazard analyses should be reviewed periodically by appropriate State and local officials and planners to determine if changes in watershed conditions would significantly affect future flood elevations.

The SCS, through the Talladega Co. SWCD, ADECA, and the EARPDC can provide technical assistance in the interpretation and use of the information contained herein and will provide additional technical assistance and data needed in local flood plain management programs.

## DESCRIPTION OF STUDY AREA

### General

The City of Childersburg is located in Talladega County, Alabama, within the Coosa River Basin (USGS Hydrologic Unit Code Coosa River - 03150106-SCS-330 and 03150107-SCS-010). The study area includes flood-prone areas of the Coosa River, Talladega Creek, Tallaseehatchee Creek and tributaries within and adjacent to the City of Childersburg (see location map, Appendix A, Sheet 1 of 1). They are perennial streams. Drainage areas are approximately as follows: Coosa River - 8,390 square miles (gage on Central of Georgia Railroad); Talladega Creek, 175 square miles; Tallaseehatchee Creek, 199 square miles; and tributaries, 4.5 square miles. A total of 14.0 stream miles was studied.

Talladega County had a population of 69,100 in 1980. Childersburg, with a 1980 population of 5,093, experienced a 5.2 percent growth in the 1970-80 decade. The ADECA has projected the City's population to increase to 5,920 by 2000. The area of incorporation, at present, is approximately 8.8 square miles and the incorporated area subject to inundation by the 100-year flood is 3.9 square miles.

### Climate

In general, rainfall is moderate and temperatures are mild with few extended periods of subfreezing weather. Rainfall amounts and runoff characteristics

vary on a seasonal basis, with normal rainfall for winter and spring being greater than summer and autumn. Because of this seasonal distribution of rainfall and low evapotranspiration rates, most major floods occur in late winter or in early spring. The normal frost-free period is from about March 30 to October 30, about 220 days.

TABLE 1

AVERAGE TEMPERATURE AND RAINFALL

Childersburg, Alabama

| Season | Temperature (Degrees Fahrenheit) | Rainfall (Inches) |
|---|---|---|
| Winter | 46.1 | 15.0 |
| Spring | 62.5 | 14.9 |
| Summer | 78.3 | 12.9 |
| Fall | 63.1 | 9.5 |
| Yearly Average 1941-70 | 62.5 | 52.3 |

Source: Climatography - No. 81, Alabama (NOAA, Department of Commerce)

Geology and Topography

The study area lies within the Appalachian Ridge and Valley Physiographic Province and covers parts of the flood plains of the Coosa River, Talladega Creek, Tallaseehatchee Creek, their minor tributaries and the land surrounding Childersburg, Alabama. The flood plains lie at about 400 to 420 feet above sea level. Southwest of town the land rises rapidly toward Bailey Mountain to an elevation near 800 feet. Southeast and east the land is low rolling flatwoods

and the flood plain of Tallaseehatchee Creek. This flood plain in the eastern portion of the study area is usually wide; flooding up to two miles across when both Tallaseehatchee Creek and the Coosa River are at very high levels.

The area is mostly underlain by Cambrian and Ordovician dolomites. Flood plain sediments are of mixed origin since the streams traverse a very diverse area and derive sediment from erosion of many rock types.

Soils

The soils within the 100-year flood hazard area formed in loamy and clayey alluvium on flood plains and stream terraces. Major soils are Chenneby, Chewacla, Choccolocco, Grasmere, Guthrie, Leadvale, Locust, McQueen, Sylacauga, and Toccoa. The soils on adjacent uplands formed in loamy and clayey sediments derived from limestone. Major soils are Decatur and Fullerton. Choccolocco, Leadvale, Locust, McQueen, and Sylacauga soils make up about 60 percent of the flood hazard area and are on the higher elevations within the area. These deep, moderately well drained to well drained soils are rarely to occasionally flooded. These soils are well suited to cultivated crops, pasture and hay, and woodland. Flooding is the main limitation to building site development and to the construction of sanitary facilities.

Chenneby, Chewacla, Grasmere, Guthrie, and Toccoa soils make up about 40 percent of the flood hazard area and are on the lower elevations. These deep, well-drained to poorly-drained soils are occasionally to frequently flooded. These soils are poorly suited to cultivated crops and fairly well suited to pasture and hay and woodland. In addition to the flooding hazard, building site development and the construction of sanitary facilities are limited by wetness, seepage, and permeability.

Decatur and Fullerton soils are on uplands adjacent to the study area. These deep, well drained soils do not flood. These soils are well suited to poorly suited to cultivated crops, woodland, and pasture and hay. Suitability is slope dependent. Building site development and the construction of sanitary facilities are limited by slope.

If detailed soils information is desired for a specific location, the Talladega County Soil and Water Conservation District or personnel in the Soil Conservation Service Field Office in Talladega should be consulted.

Prime Farmlands

Approximately 60 percent of the flood hazard area and approximately 60 percent of the adjacent uplands qualify for prime farmland. Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and is also available for these uses. Land that may qualify as prime farmland could be cropland, pastureland, rangeland, forest land, or other land, but not urban built-up land or water. It has the soil quality, growing season, and moisture supply needed to economically produce sustained high yields of crops when treated and managed, including water management, according to acceptable farming methods. In general, prime farmlands have an adequate and dependable water supply from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, acceptable salt and sodium content, and few to no rocks. They are permeable to water and air. Prime farmlands are not excessively erodible or saturated with water for long periods of time, and they either do not flood frequently or are protected from flooding.

## NATURAL VALUES

### Land Use

The area addressed in this flood plain study is affected by the Coosa River, Talladega and Tallaseehatchee Creeks and their tributaries.

The present land use in the Coosa River Watershed consists of cropland (11 percent); pasture (7 percent); urban and built-up areas (6 percent); forest land (71 percent); the remaining land is in miscellaneous uses (5 percent). The flood plain land use of the study area is as follows: urban (9 percent), pasture (35 percent), forest land (49 percent), and water (7 percent).

Historically, the study area has been a part of the oak-hickory complex. This complex is more widespread than any of the other deciduous communities which occur in Alabama. Among the tree species which characterize this complex are white, red, black, chinquapin, post, and chestnut oaks; black locust, sugar and red maples, blackgum, sweetgum, beech, hickories; loblolly, longleaf, shortleaf, and Virginia pines; and sourwood.

Ground cover diversity and density is dependent upon the density and canopy expanse of the overstory trees. The major plants making up the understory and ground cover are flowering dogwood, eastern redbud, sweetshrub, American beautyberry, American strawberry bush, Piedmont azalea, honeysuckles, and many others.

Plant species which are listed only by Alabama as endangered, threatened, or special concern and which may be found in the oak-hickory complex include showy orchis, ginseng, horse gentian, hairy gentian, Alabama skullcap and buffalonut.

The growth of urban areas and their surrounding suburbs has probably had the greatest adverse impact on this deciduous forest community. Other adverse effects have occurred as the result of converting the oak-hickory forest to pine plantations, to farm land, and inundation due to impoundments on the larger streams.

## Wetlands

Wetland types (U.S. Department of the Interior, Fish & Wildlife Service Circular 39) associated with the oak-hickory complex are 1 and 6. Type 1 make up the bulk of the wetland area with Type 6 occurring on some of the smaller, perennial streams.

## Fish and Wildlife

The oak-hickory complex provides habitat for several game and non-game species of wildlife. Game species occurring or residing in the oak-hickory complex are whitetail deer, wild turkey, gray squirrels, rabbits, and, to some extent, the bobwhite quail. Furbearers found in the complex include oppossum, raccoon, bobcat, beaver, mink, and muskrat. Other animal populations supported by the oak-hickory complex include amphibians, reptiles, and many species of non-game birds.

The major species of game fish in the study area include bluegill, largemouth bass, longear sunfish, black and white crappie, white bass, and striped bass. The so-called rough fish species include the catfishes, bullheads, gar, suckers, carp, buffalo, and shad.

## Archeological, Historical, and Natural Values

There are 129 sites of archeological significance reported in Talladega County and 224 historic landmarks. However, none of these archeological or historical sites will be affected by application of any of the flood plain management alternatives presented in this study.

Urban growth and clearing of the oak-hickory complex in the study area has drastically altered the natural values. Much of the area is now in open fields or pasture with some urban build up in the city of Childersburg where grass and herbaceous growth has replaced much of the vegetation.

# FLOOD PROBLEMS

## Historical Floods

Damaging floods have occurred several times in the past on the Coosa River. Major floods occurred in 1866, 1938, 1949, 1951, 1961, and 1979. Of these, the flood in 1866 was the greatest. The flood of 1961 resulted in flood damages to both commercial and residential properties in the study area. About 25 residences received flood damages in the Coosa Court subdivision. Flood damages also occurred to several businesses in the downtown business district of Childersburg (Appendix A, Sheet 9 of 13). The most recent major flood was April 1979 with a flood elevation of 411.4 feet (MSL) at USGS gage 02407000 on the Coosa River at Childersburg (Appendix A, Sheet 8 of 13).

Flood-producing storms may occur at any time of the year but are more numerous during winter and early spring. Winter storms are generally of the frontal type lasting 2 to 4 days and covering a large area. Occasionally some summer disturbances are associated with the passage of hurricanes or tropical storms.

Analysis of historical flood records for the study area indicate a flood equal to the 100-year flood best reflects the present flooding problems. This flood is defined as the flood which has 1 chance in 100 (1 percent) of being equalled or exceeded in any given year. However, floods from storms larger than the 100-year flood have occurred in the study area and will occur again in the future.

## Future Floods

The areas that are subject to damage by flooding along the two streams include commercial, agricultural, and residential developments along with associated roads, streets, and utilities. Approximately 2480 acres in the study area are subject to damage by the 100-year flood.

TABLE 2
STREAM MILEAGE AND AREA FLOODED
100-YEAR FLOOD

| Stream Reach | Miles Studied | Area Flooded (Acres) |
|---|---|---|
| Coosa River | 4.0 | 480 |
| Talladega Creek | 4.0 | 860 |
| Tallaseehatchee Creek & Tributaries | 6.0 | 1,140 |
| Total | 14.0 | 2,480 |

Source: USDA-SCS, River Basin Staff, Auburn, Alabama

Future development of remaining open spaces in the flood plain should be considered only if potential flood damage can be eliminated or held to acceptable minimums. A knowledge of the flood potential and hazard is important in land use planning and for management decisions concerning flood plain utiliza-

tion. This report identifies those areas that are subject to possible future floods. Special emphasis is given to these floods through maps, photographs, and profiles. This report does not provide solutions to flood problems; however, it does furnish a suitable basis for the adoption of land use controls to guide flood plain development.

The areas along the Coosa River and the lower reach of Talladega Creek and Tallaseehatchee Creek and tributaries which would be flooded by the 100-year and 500-year storms are shown on Flood Hazard Area Photomaps, Scale 1" = 400' (appendix A, sheets 1 through 13). The Photomap Index in appendix A shows the location and area covered by individual photomaps.

The actual limits of these overflow areas may vary somewhat from those shown because of the contour interval and scale of the base maps do not permit precise plotting of the flood area boundaries. A more exact determination of the depth of flooding by the 100-year and 500-year floods at any particular point along the streams can be determined from the water surface profiles and the ground elevation at the point in question. To determine the depth of flooding or the height of land above the flood, the following steps should be followed:

1. Determine the stream mileage to the point in question.
2. Read the flood elevation for this mileage from the water surface profiles.
3. Determine the ground elevation at the point in question.
4. Compare the flood height with the ground elevation to compute the depth of the flooding or the height of land above the flood.

FLOOD ELEVATIONS

Childersburg, Alabama

| Location | Flood Frequency | | | |
|---|---|---|---|---|
| | 10-Year | 50-Year | 100-Year | 500-Year |
| | ----------Elevation in Feet (MSL)-------- | | | |
| Coosa River | | | | |
| Central of Georgia Railroad | 408.0 | 412.2 | 414.0 | 415.5 |
| Mouth Tallaseehatchee Creek | 408.3 | 412.3 | 414.3 | 415.8 |
| Mouth Talladega Creek | 409.0 | 413.0 | 415.0 | 416.5 |
| Tallaseehatchee Creek | | | | |
| Hwy 235 (upstream side of road) | 408.4 | 413.8 | 415.7 | 417.2 |
| Hwy 76 | 408.9 | 414.7 | 417.7 | 419.1 |
| Talladega Creek | | | | |
| Hwy 235 | 409.1 | 413.8 | 416.0 | 417.2 |
| Town Creek | | | | |
| Hwy 76 | 415.7 | 416.3 | 416.5 | 417.2 |
| Griffin Branch | | | | |
| Co. Road 34 | 412.3 | 414.7 | 417.4 | 418.9 |

Source: USDA-SCS, River Basin Staff, Auburn, Alabama

## FLOOD PLAIN MANAGEMENT

### Existing Flood Plain Management

The National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973 encourage wise management of flood-prone areas through land use management practices. This Act requires local units of government which enter the flood insurance program to develop land use management practices for flood-prone areas based on competent evaluation of flood hazards. The State of Alabama, responding to the National Flood Insurance Act, authorized and granted powers by Section 11 of the Code of Alabama 1975 as amended, to each county or local government in Alabama to prescribe criteria for land management, including control measures in flood-prone areas. The ADECA and the Regional Planning Commissions assist county and local governments in carrying out this authority by developing comprehensive land management programs in flood-prone areas. The City of Childersburg has participated in the NFIP since April 23, 1975 (Emergency Program Phase). Entrance into this program authorized the sale of flood insurance at reduced rates for both residential and non-residential structures and mobile homes and their contents throughout the City. In entering the NFIP, the City agreed to adopt the codes and ordinances necessary to protect future development in the community from flood hazards.

### Alternatives for Flood Plain Management

The current low level of flood damages will allow local officials to emphasize strengthening their flood plain management program primarily by proper development and use in the flood plain and regulating upland land use changes to avoid increasing future runoff rates. Technical flood hazard information is a valuable tool which the City of Childersburg can use to guide development and use of the flood-prone area, and thereby minimizing future losses from flooding. This section is intended to outline a program by which the City can reduce the

destruction and loss of property associated with a flood, while at the same time achieving wise use of the flood-prone areas. The Flood Hazard Area Photomaps contained in this report could be considered for adoption as part of Childersburg's flood plain management program or the data could be transferred to the cities zoning map. If flood maps are developed and published as part of a NFIP flood insurance study, these maps could be officially incorporated into the city's flood plain management ordinance. Additional controls may need to be imposed when more detailed information is available. It is recommended that the City develop a program to publicize the availability of flood insurance and encourage community residents to participate in the program, especially those located in or near flood-prone areas. Residents in flood-prone areas should be made aware of the impacts of not obtaining flood insurance coverage.

In conformance with the requirements of the NFIP, the City is already enforcing certain regulations in currently identified flood-prone areas. These include the basic subdivision and zoning ordinances and construction codes. A local regulatory program should be implemented through the use of codes and ordinances and proper administrative procedures. Revision of existing codes and adoption of effective policies and procedures can result in the wise management of flood-prone areas in future years. Land use management practices in flood-prone areas are an important aspect of a flood plain management program. These practices include zoning, subdivision regulation, and construction standards. Additional regulations developed for the flood-prone areas should be integrated with the City's existing land use management policies. The ordinances that are amended and the additional regulations that are adopted should be mutually supporting and should be compatible with the City's overall development policies. Assistance can be obtained from the East Alabama Regional Planning and Development Commission or ADECA in developing the regulatory

measures needed. The following alternatives may also be viable as a part of the City's overall plan to minimize future flood damages:

Flood warning and forecasting: The National Oceanic and Atmospheric Administration (NOAA) National Weather Service (NWS) Office in Birmingham, Alabama, issues flood warnings for the Coosa River. Severe weather and flood warnings, along with general weather forecasts, are distributed by the National Weather Wire Service. The National Weather Service is linked by teletype to the media (newspaper, radio, television) and any other private or government agency in the area where a primary wire service has been established, if they arrange in advance for the service. Other local media may obtain the information relayed through news wire services. Provisions for evacuation operations of county public service agencies are accomplished through the Talladega County Civil Defense Office. Stage readings and predictions of the National Weather Service are furnished to local and county Emergency Management Agencies (Civil Defense Units) when flooding is predicted in their area. Once a flash flood watch is issued by the National Weather Service, the County Emergency Management Agency monitors stream stages and issues hourly statements to local radio stations for broadcast to the public. Evacuation of low-lying areas is accomplished through the help of local national guard units and rescue squads.

Temporary evacuation: This is sometimes the only practical method of reducing flood damage at existing developments; but to be effective, reliable forecasts of stream stages must be available to provide time for action. Such forecasts are available for the Coosa River and its major tributaries from the National Weather Service. Public safety and Emergency Management officials of Childersburg may wish to consider the development of a temporary evacuation plan.

APPENDIX A

PHOTOMAP INDEX AND LOCATION MAP

FLOOD HAZARD AREAS - SHEETS 1 THROUGH 13

LEGEND

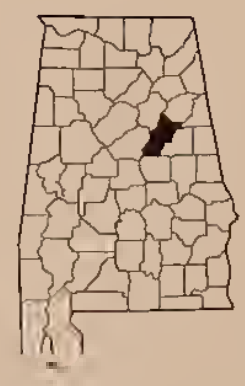
City Limits

Stream

8 Photomap Area Coverage

SCALE 0 2000 4000 FEET
0 500 1000 METERS
APPROXIMATE

Original Base From U.S.G.S. Quads
Childersburg 1972, Harpersville 1972



VICINITY MAP


SHEET 1 OF 1

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
CHILDERSBURG, ALABAMA
FLOOD PLAIN MANAGEMENT STUDY
TALLADEGA COUNTY

# PHOTOMAP INDEX AND LOCATION MAP

## COOSA RIVER AND TRIBUTARIES IN THE VICINITY OF CHILDERSBURG

APRIL 1984 4-R-38517


# FLOOD HAZARD AREA

# COOSA RIVER AND TALLADEGA CREEK

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

**CHILDERSBURG, ALABAMA**
**FLOOD PLAIN MANAGEMENT STUDY**
TALLADEGA COUNTY

SHEET 1 OF 13

USDA-SCS-FORT WORTH, TEXAS 1984

APRIL 1984 4-R-38517

LEGEND

X RM38 Reference Mark

100 Year Flood Hazard Area

500 Year Flood Hazard Area

Cross Section Location

SCALE 0 400 800 FEET

0 100 200 METERS

APPROXIMATE

1 2 3 4

N

Creek

62

Talladega

Mile 3.0

LIMIT OF STUDY

T-20-S
R-3-E

5 4 8 9

T-20-S
R-3-E

4 3 9 10

MATCH SHEET 1

MATCH SHEET 3

MATCH SHEET 4

# FLOOD HAZARD AREA

# TALLADEGA CREEK

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
**CHILDERSBURG, ALABAMA**
**FLOOD PLAIN MANAGEMENT STUDY**
TALLADEGA COUNTY

SHEET 2 OF 13

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**CHILDERSBURG, ALABAMA**
**FLOOD PLAIN MANAGEMENT STUDY**
TALLADEGA COUNTY

# FLOOD HAZARD AREA

# COOSA RIVER AND TALLADEGA CREEK

SHEET 3 OF 13

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**CHILDERSBURG, ALABAMA**
**FLOOD PLAIN MANAGEMENT STUDY**
TALLADEGA COUNTY

# FLOOD HAZARD AREA

# TALLADEGA CREEK

SHEET 4 OF 13

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**CHILDERSBURG, ALABAMA**
**FLOOD PLAIN MANAGEMENT STUDY**
TALLADEGA COUNTY

SHEET 5 OF 13

# FLOOD HAZARD AREA

# COOSA RIVER AND TALLADEGA CREEK

APRIL 1984 4-R-38517

MATCH SHEET 5

LEGEND

X RM38 Reference Mark

100 Year Flood Hazard Area

500 Year Flood Hazard Area

Cross Section Location

SCALE 0 400 800 FEET

0 100 200 METERS

APPROXIMATE

5 6 7 8 9

LIMIT OF STUDY

CITY LIMITS

Coosa River

Tallaseehatchee Creek

Mile 86.72

WOODSIDE ST.

CANAL ST.

EDGEWOOD DR.

INEWOOD TERRACE

WOODS DE ST.

R 02 3N

Mile 0.44

30V

3

4

7

SPUR

RAILROAD

Twin Creek

Creek

Mile 1.6

T-20-S
-3 E

N

X RM9

MATCH SHEET 9

# FLOOD HAZARD AREA

## COOSA RIVER AND TALLASEEHATCHEE CREEK

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**FLOOD PLAIN MANAGEMENT STUDY**
TALLADEGA COUNTY

SHEET 6 OF 13

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USDA SCS PORT WORTH TX-AS 1984

MATCH SHEET 9

MATCH SHEET 6

MATCH SHEET 5

Tallaseehatchee Creek

FOREST HILLS

KYMULGA ROAD

STATE HIGHWAY 76

SOUTHERN RAILROAD

Tallaseehatchee Cr.

CITY LIMITS

T-20-S
R-3-E

LIMIT OF STUDY

MATCH SHEET 10

LEGEND

X RM38 Reference Mark

100 Year Flood Hazard Area

500 Year Flood Hazard Area

Cross Section Location

SCALE 0 100 200 METERS
0 400 800 FEET

APPROXIMATE

5
6
7
10

N

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CHILDERSBURG, ALABAMA
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TALLADEGA COUNTY

# FLOOD HAZARD AREA

# TALLASEEHATCHEE CREEK

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TALLADEGA COUNTY

SHEET 8 OF 13

# FLOOD HAZARD AREA

# COOSA RIVER

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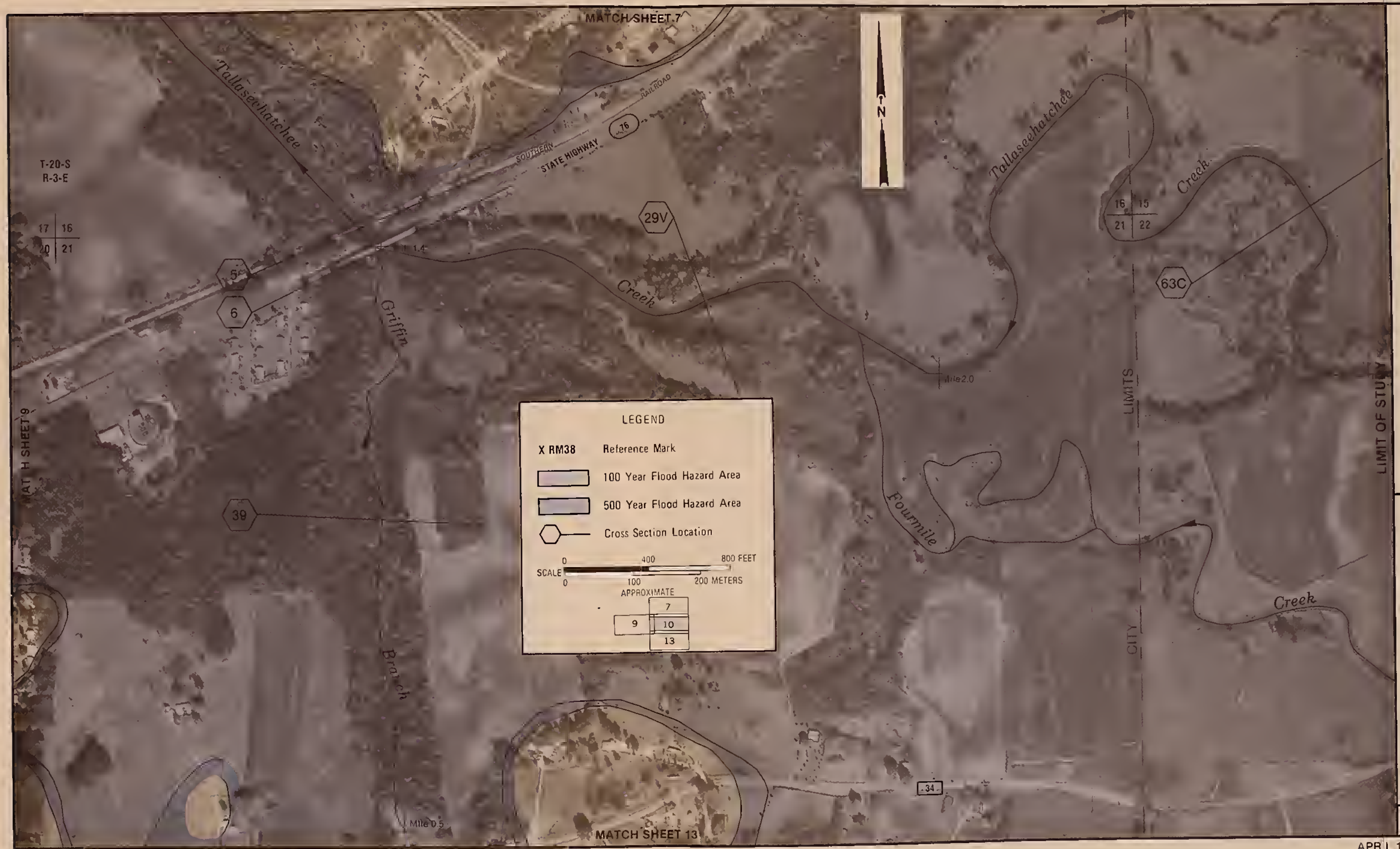
FLOOD PLAIN MANAGEMENT STUDY
TALLADEGA COUNTY

SHEET 9 OF 13

# FLOOD HAZARD AREA

## TALLASEEHATCHEE CREEK AND TOWN CREEK

APRIL 1984 4-R-38517




# FLOOD HAZARD AREA

## TALLASEEHATCHEE CREEK AND GRIFFIN BRANCH

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**FLOOD PLAIN MANAGEMENT STUDY**
TALLADEGA COUNTY

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APRIL 1984 4-R-38517

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U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
**CHILDERSBURG, ALABAMA**
**FLOOD PLAIN MANAGEMENT STUDY**
TALLADEGA COUNTY

SHEET 11 OF 13

# FLOOD HAZARD AREA

# COOSA RIVER

APRIL 1984 4-R-38517


U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
**CHILDERSBURG, ALABAMA**
**FLOOD PLAIN MANAGEMENT STUDY**
TALLADEGA COUNTY

# FLOOD HAZARD AREA

# TOWN CREEK

SHEET 12 OF 13

APRIL 1984 4-R-38517


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**CHILDERSBURG, ALABAMA**
**FLOOD PLAIN MANAGEMENT STUDY**
TALLADEGA COUNTY

# FLOOD HAZARD AREA

# TALLASEEHATCHEE CREEK AND GRIFFIN BRANCH

SHEET 13 OF 13

APRIL 1984 4-R-38517

# APPENDIX B

# FLOOD PROFILES

ELEVATION IN FEET (M.S.L.)

360 370 380 390 400 410 420

84 85 86 87 88 89

LAY LAKE ELEVATION
396.0

LIMIT OF STUDY

U.S. HWY 280

CENTRAL OF GEORGIA R.R.
USGS GAGE 02407000

JCT. TALLASEEHATCHEE CK
86+72

JCT. TALLADEGA CK
87+67

LIMIT OF STUDY

STREAM DISTANCE IN MILES ABOVE CONFLUENCE WITH ALABAMA RIVER

LEGEND

- 500 YEAR FLOOD
- 100 YEAR FLOOD
- 50 YEAR FLOOD
- 10 YEAR FLOOD
- STREAM BED
- CROSS SECTION LOCATION

U.S. DEPARTMENT OF AGRICULTURE
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**CHILDERSBURG, ALABAMA**

(TALLADEGA COUNTY)

**FLOOD PROFILES**

**COOSA RIVER**

01P

ELEVATION IN FEET (M.S.L.)

380 390 400 410 420

STREAM DISTANCE IN MILES' ABOVE CONFLUENCE WITH COOSA RIVER

0 1 2 3 4 5

CONFLUENCE WITH COOSA RIVER

STATE HWY 235

CITY LIMITS

LIMIT OF STUDY

69C

45

65V

62V

LEGEND

500 YEAR FLOOD

100 YEAR FLOOD

50 YEAR FLOOD

10 YEAR FLOOD

STREAM BED

CROSS SECTION LOCATION

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

**CHILDERSBURG, ALABAMA**

(TALLADEGA COUNTY)

02P

# FLOOD PROFILES

## TALLADEGA CREEK

ELEVATION IN FEET (M.S.L.)

380
390
400
410
420
430

CONFLUENCE WITH COOSA RIVER

HIGHWAY 235

R.R SPUR/CENTRAL OF GEORGIA

SOUTHERN RAILROAD

HIGHWAY 76 AND CONFLUENCE WITH GRIFFEN BRANCH

LIMIT OF STUDY

STREAM DISTANCE IN MILES ABOVE CONFLUENCE WITH COOSA RIVER

0
1
2
3
4

LEGEND

500 YEAR FLOOD
100 YEAR FLOOD
50 YEAR FLOOD
10 YEAR FLOOD
STREAM BED
CROSS SECTION LOCATION

03P

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

**CHILDERSBURG, ALABAMA**

(TALLADEGA COUNTY)

**FLOOD PROFILES**

**TALLASEEHATCHEE CREEK**

ELEVATION IN FEET (M.S.L.)

380 390 400 410 420 430 440

STREAM STATIONS IN FEET

0+00 5+00 10+00 15+00 20+00 25+00 30+00 35+00 40+00 45+00 50+00 55+00 60+00

CONFLUENCE WITH TALLASEEHATCHEE CREEK

SOUTHERN RAILROAD

HIGHWAY 76

CENTRAL GEORGIA RAILROAD

6 AVENUE

8 9 11 12 14 15 18 19 21 22

**LEGEND**

- 500-YEAR FLOOD
- 100-YEAR FLOOD
- 50-YEAR FLOOD
- 10-YEAR FLOOD
- STREAM BED
- CROSS SECTION LOCATION

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

# CHILDERSBURG, ALABAMA

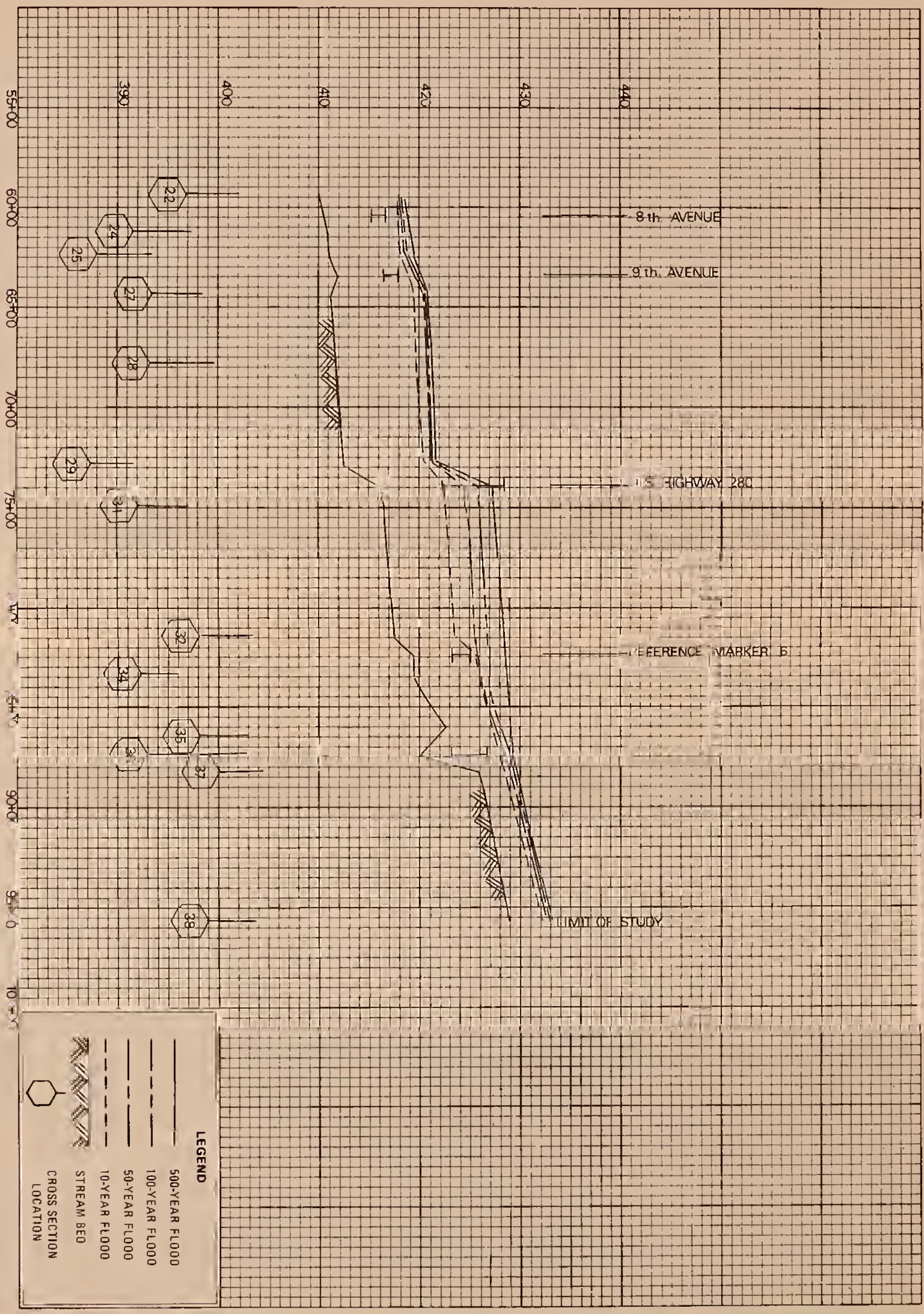
(TALLADEGA COUNTY)

## FLOOD PROFILES

TOWN CREEK

04P

ELEVATION IN FEET (M.S.L.)




STREAM STATIONS IN FEET

OSP

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

**CHILDERSBURG, ALABAMA**

(TALLADEGA COUNTY)

# FLOOD PROFILES

## TOWN CREEK

ELEVATION IN FEET (M.S.L.)

380 390 400 410 420

STREAM STATIONS IN FEET

0+00 5+00 10+00 15+00 20+00 25+00 30+00 35+00 40+00 45+00 50+00 55+00 60+00

CONFLUENCE WITH TALLASEEHATCHEE CREEK

COUNTY ROAD 34

LIMIT OF STUDY CHILDERSBURG CITY LIMITS

39 40 42 43

LEGEND

500-YEAR FLOOD

100-YEAR FLOOD

50-YEAR FLOOD

10-YEAR FLOOD

STREAM BED

CROSS SECTION LOCATION

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

# CHILDERSBURG, ALABAMA

(TALLADEGA COUNTY)

## FLOOD PROFILES

GRIFFIN BRANCH

06P

APPENDIX C

INVESTIGATION AND ANALYSIS

ELEVATION REFERENCE MARKS

GLOSSARY OF TERMS

BIBLIOGRAPHY

## INVESTIGATION AND ANALYSIS

### Flood Data

There are several stream gaging stations located in the Coosa River Basin; however, one station is located in the study area. The one nearest the study is 02407000 located on the Central of Georgia Railroad bridge, 700 feet upstream from bridge on Highway 280, see table of Annual Peak Discharges, table 3, page C-2. To supplement gaging station records, newspaper files and historical documents were searched for information concerning past floods. In addition, high water marks were recovered for some of the past floods.

Flow-frequency curves were developed from computer analysis of peak discharge records and "Floods in Alabama, Magnitude and Frequency" for drainage areas above 15 square miles [3/]. Also, curves were developed from "Flood Frequency of Small Streams in Alabama, HPR No. 83 (1977), U.S. Geological Survey [4/].

### Surveys

Field surveys completed in 1982 included 27 stream channel and valley cross sections, and 18 bridge and 18 road profile sections within the study area. Valley and channel cross sections were surveyed at selected locations to determine valley shape, width, and other hydraulic characteristics. Elevations of roads, bridges, culverts, and other control points were established. High water marks were surveyed for the 1951 and 1961 historical floods. All of the surveys were referenced to mean sea level datum. The U.S. Geological Survey 7½-minute topographic quadrangle sheets (20-foot contour) were used for orientation.

TABLE 3

ANNUAL PEAK DISCHARGE RECORDS

02407000 Coosa River at Childersburg, Ala.

LOCATION -- Lat 33°17'30", long 86°21'50", in NE½ sec. 18. T. 20S., R. 3 E. Shelby County, near right bank on downstream side of Central of Georgia Railway bridge, 700 ft. upstream from bridge on State Highway 38, 0.5 mile downstream from Tallaseehatchee Creek, and 1 mile northwest of Childersburg, and at mile 86.3.

AREAL PARAMETERS -- Drainage area, 8,390 sq. mi.; channel slope, 1.0 ft/mi; channel length, 328 mi; angle of main channel, 220 degrees.

GAGE -- Recording. Datum of gage is 382.45 ft. above mean sea level (levels by Alabama Power Co.). Prior to Oct. 1, 1915, at datum 0.10 ft. lower. Since September 29, 1967, auxiliary recording gage 3.5 miles downstream.

STAGE-DISCHARGE RELATION -- Defined by current-meter measurements below 19.0 feet and 80,000 cfs.

REMARKS -- Since December 1949 flow regulated by Allatoona Reservoir on Etowah River, since April 1961, by Weiss Reservoir on Coosa River, since July 1964, by Logan-Martin Reservoir.

SELECTED PEAK DISCHARGE AND STAGE

| WATER YEAR | ANNUAL PEAK DISCH (CFS) | DATE | GAGE HEIGHT OF ANNUAL PEAK (FT) |
|---|---|---|---|
| 1916 | 121000 | 07-11-16 | 24.7 |
| 1920 | 116000 | 12-10-19 | 24.0 |
| 1936 | 130000 | 02-05-36 | 28.5 |
| 1938 | 136000 | 04-09-38 | 30.03 |
| 1943 | 116000 | 12-30-42 | 26.4 |
| 1947 | 127000 | 01-21-47 | 26.95 |
| 1949 | 136000 | 11-30-48 | 28.3 |
| 1951 | 146000 | 03-30-51 | 30.1 |
| 1961 | 140000 | 02-23-61 | 30.41 |
| 1979 | 139000 | 04-14-79 | 28.79 |

## Preparation of Map and Profiles

Flood Hazard Area Photomaps, scale 1" = 400', were prepared by drawing the limits of the 100-year and 500-year floods on aerial photos (appendix A, sheets 1 through 13) to indicate the extent of the area subject to inundation. The photomaps are reproductions of ASCS photomaps taken in 1977. The flood profiles were drawn at a scale of 2" = 1 mile or 1" = 500' (appendix B, sheet 01P-06P). The profile stationing is measured from the aerial photographs.

## Natural and Cultural Values

The discussion of natural and cultural values is based on accumulated data published in various sources and personal observations of the staff biologist.

ELEVATION REFERENCE MARKS

(See Flood Hazard Areas)

TABLE 4
ELEVATION REFERENCE MARKS*

| REFERENCE MARK | ELEVATION IN FEET (MSL)** | DESCRIPTION OF LOCATION |
|---|---|---|
| 38 (U.S.E.) | 420.40 | --At Childersburg, Talladega County, on the Central of Georgia Railway, at the bridge over Coosa River, in the top of the northwest corner of the south concrete pier, 8 feet west of the west rail, about 6 feet lower than the track. A Corps of Engineers, U.S. Army, standard disk, stamped "38." (128.146 meters or 420.426 feet) NOTE--Check leveling by this Bureau in 1949 indicated an elevation of 128.137 meters or 420.396 feet for this mark. |
| RV102.3N (S RY) | 417.45 | --1.0 mile east along the Southern Railway from the station at Childersburg, Talladega County, at the bridge over Tallaseehatchee Creek, in the top of the north end of the back wall of the west concrete abutment, 4 feet north of the north rail, 3.5 feet south of the north edge of the back wall, and 8 inches west of the east edge. A standard Monel-metal rivet. (127.240 meters or 417.453 feet) |
| RM 1 | 415.82 | A railroad spike in the side of a power pole at the intersection of northeast 4th Avenue and in the NW angle of streets. |
| RM 3 | 417.27 | A chiseled square on top of the southeast corner of a concrete culvert is on Southwest 8th Avenue and 40 foot northwest of First Baptist Church in Childersburg, Ala. |
| RM 5 | 425.19 | A chiseled square on top of the southwest corner of bridge over a small creek on U.S. Highway 280 at or near where 3rd Street crosses U.S. Highway 280 in Childersburg, Ala. |

TABLE NO. 4 CONTINUED

| REFERENCE MARK | ELEVATION IN FEET (MSL)** | DESCRIPTION OF LOCATION |
|---|---|---|
| RM 6 | 425.58 | A chiseled square on the top of the southwest corner of a culvert over creek on 5th Street at entrance to Grove Park and on west side of U.S. Highway 280 in south Childersburg, Ala. |
| RM 9 | 409.05 | A steel bit in the east side of a telephone pole at northeast 10th street and northeast 4th Avenue and in the southwest angle in Childersburg, Ala. |
| RM 10 | 417.12 | A railroad spike in the south side of a power pole with guide wire along State Highway 235, and 300 feet west of Tallaseehatchee Creek. |
| RM 11 | 423.42 | A chiseled square on top of the southwest corner of bridge over Talladega Creek on State Highway 235 east of Childersburg, Ala. |
| USBM A-34 | 439.44 | --At Bon Air, Talladega County, on the Central of Georgia Railway, 2 rails south of the station, 57 3/4 rails south of milepost S 399-B 43, 2-3/4 rails north of the switchstand at the south end of a siding, 1 rail south of a road crossing, and 37 feet east of the main track. A standard disk, stamped "A 34 1934" and set in the top of a concrete post. (133.942 meters or 439.441 feet) |

* Locations designated on Flood Hazard Area Photomaps (Appendix A, Sheets 1 through 13).

** Mean Sea Level (MSL).

## GLOSSARY OF TERMS

Bridge Area -- The effective hydraulic flow area of a bridge opening accounting for the presence of piers, attached conduits, and skew (alignment), if applicable.

Channel -- A natural or artificial water course of perceptible extent with definite bed and banks to confine and conduct flowing water continuously or periodically.

Flood -- "Flood" or "flooding" means a general and temporary condition of partial or complete inundation of normally dry land areas from:

(1) The overflow of inland or tidal waters and/or

(2) The unusual and rapid accumulation of runoff of surface water from any source.

Flood Frequency -- A means of expressing the probability of flood occurrences as determined from a statistical analysis of representative streamflow or rainfall and runoff records. It is customary to estimate the frequency with which specific flood stages or discharges may be equalled or exceeded, rather than the frequency of an exact stage or discharge. Such estimates by strict definition are designated "exceedence frequence," but in practice the term "frequency" is used. The frequency of a particular stage of discharge is usually expressed as occurring once in a specified number of years. Also see definition of "recurrence interval." For example - A 100-year flood is one having an average frequency of occurrence in the order of once in 100 years. It has a 1 percent chance of being equalled or exceeded in any given year. It is based on statistical

analyses of streamflow records available for the watershed and analyses of rainfall and runoff characteristics in the general region of the watershed.

Flood Hazard Area -- Synonymous with Flood Plain (general). Used in FEMA National Flood Insurance Program. Commonly used in reference to flood map.

Flood Peak -- The highest stage or discharge attained during a flood event; also referred to as peak stage or peak discharge.

Flood Plain (general) -- The relatively flat area or low lands adjoining the channel of a river, stream, or watercourse; ocean, lake, or other body of standing water which has been or may be covered by floodwater.

Floodway Fringe -- The portion of the flood plain beyond the limits of the floodway. Floodwaters in this area are usually shallow and slow moving.

Flood Plain (specific) -- A definitive area within a flood plain (general) or flood-prone area known to have been inundated by a historical flood, or determined to be inundated by floodwater from a potential flood of a specified frequency.

Flood-Prone Area -- Synonymous with Flood Plain (general). Used in Alabama land management and use law.

Flood Profile -- A graph showing the relationship of water surface elevation to stream channel location. It is generally drawn to show the water surface elevation for the peak of a specific flood, but may be prepared for conditions at a given time or stage.

Flood Stage -- The elevation of the overflow above the natural banks of a stream or body of water. Sometimes referred to as the elevation and the flood peak elevation measures for a specific storage area.

Floodway -- The channel of the stream and adjacent portions of the flood plain designated to carry the flow of the design flood, of the 100-year frequency flood in Alabama.

High Water Mark (HWM) -- The maximum observed and recorded height or elevation that floodwater reached during a storm, usually associated with the flood peak. The high water mark may be referenced to a particular building, bridge, or other landmark, or based on debris deposits on bridges, fences, or other evidence of the flood.

Low Bank -- The highest elevation at a specific stream channel cross section at which the flow in the stream can be contained in the channel without overflowing into adjacent overbank areas.

Low Point on Roadway -- The lowest elevation on a road profile usually in the vicinity of where the road crosses the stream. It is the first point on the roadway to be flooded.

Potential Flood -- A spontaneous event (natural phenomenon) capable of occurring from a combination of meteorological, hydrological, and physical conditions; the magnitude of which is dependent upon specific combinations. See Flood and Flood Frequency.

Recurrence Interval -- The average interval of time expected to elapse between floods of a particular severity based on stage or discharge. Recurrence interval is generally expressed in years and is determined statistically from actual or representative streamflows. Also see definition of Flood Frequency.

Roadway at Crossing (Top) -- The elevation of the roadway immediately above the stream channel. It may be higher than the low point of the roadway.

Runoff -- That part of precipitation which flows across the land and enters a perennial or intermittent stream.

Stream Channel -- A natural or artificial watercourse of perceptible extent, with definite bed and banks to confine and conduct flowing water continuously or periodically.

Stream Channel Bottom -- The lowest part of the stream channel (either in a constructed cross section or a natural channel). Bottom may be plotted and connected to provide a stream bottom profile.

Stream Channel Flow -- That water which is flowing within the limits of a defined watercourse.

Stream Terrace -- A flat or undulating plain bordering a flood plain. Terraces normally occur at higher elevations than flood plains and usually are either free from flooding or flooded less often than once every two years.

Structural Bottom of Opening -- The lowest point of a culvert or bridge opening with a constructed bottom through which a stream flows which could limit the stream channel bottom to that specific elevation. This structural bottom may be covered with sediment or debris which further restricts the size of the opening.

Top of Opening -- The lowest point of a bridge, culvert or other structure over a river, stream or watercourse that limits the height of the opening through which water flows. This is referred to as "low steel" or "low chord" in some regions.

Watershed -- A drainage basin or area which collects and transmits runoff usually by means of streams and tributaries to the outlet of the basin.

Watershed Boundary -- The divide separating one drainage basin from another.

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